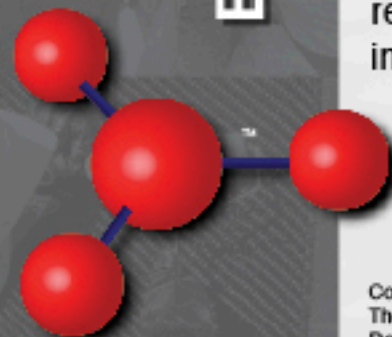


### HJ3

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## INTRODUCTION

Mines utilize large steel tanks to store water that is used in various plant processes. In this particular copper facility, a steel tank that holds 2.5 Million gallons of water suffers from severe corrosion to its steel shell resulting in fatigue, cracking, and leaks.

## PROBLEM

To determine the extent of corrosion, HJ3 performed an ultrasonic thickness test to measure the steel loss throughout the body of the tank. Corrosion to the steel ranged from 25% to 60% steel loss. At these levels, the existing steel was at risk of structural failure. To minimize risk of structural failure, the water levels within the tank were lowered to 50% capacity.

## SOLUTION

HJ3 engineers developed a carbon fiber solution layering carbon fiber to directly replace the strength lost for each ring of the tank. The bottom 50% of the steel tank was strengthened using one layer of HJ3 CF512 uni-directional fabric. The top 50% of the tank received anywhere from 2 layers to 4 layers of CF516 uni-directional carbon fiber. The system was then coated with a urethane top coat pigmented to match the company's colors and logos. The inside of the tank was blasted and coated to stop the internal corrosion from undermining the remaining steel.

## CONCLUSION

The installation was completed in 8-weeks and resulted in over \$3 Million in savings when compared to a new steel tank. The HJ3 repair resulted in zero downtime and minimal interruptions to plant operations. The installed system was installed with a 3-year warranty that is standard on all HJ3 repairs.

